LUCID

It's a principle that has been engrained in our minds since we were little: Turn the lights off when you leave! Our parents may have consistently stressed how wasted electricity equates to an inflated electric bill, or others may have told us how reducing our energy demands means a cleaner and healthier planet. Either way, it's a far-reaching connection for any kid, or individual to make for that matter, how small changes in behavior will have a broader impact on a wallet, or the environment.

PHASE III SUCCESS
Over $14 million in private equity funding, including a large investment by GE Ventures.

AGENCIES
EPA, DOE

SNAPSHOT
Developed in part with funding from the EPA, BuildingOS is deployed across the nation, in over 14,000 buildings owned and managed by customers including Google, Autodesk, college universities, and city governments. One hundred of the Fortune 500 companies use BuildingOS to modernize and improve their building operations.

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Enter Lucid and its novel idea of capturing real-time data from buildings. In 2004, Founder and President Vladi Shunturov was a student at Oberlin College in Ohio. He applied for an Environmental Protection Agency (EPA) People, Prosperity and the Planet (P3) grant. As the only non-technical college that received the award that year, Vladi took the $10K in funding to launch an instrumental study that would eventually serve as the basis for his multimillion dollar company.

"It is feedback technology," explains Shunturov. "We believed that if you could capture building performance data in real-time, and make it easily accessible to occupants and operators, we would expect to see a big impact on our behavior."

He was right. Vladi collaborated with his mentor, Prof. John Petersen, to set up his control study in two dormitories at Oberlin. With submeters on every floor, and a touchscreen located in the lobby, students could easily assess how much energy they used at any instant. Most importantly, they could use the system to try out taking different actions in the buildings and teaching themselves which ones had the biggest impact. To further the real-world effect, data were expressed in terms of money or the amount of fuel burned to supply that power, rather than kilowatts per hour, which doesn't tell the user anything in terms of opportunity cost. A competition soon ensued – who could save the most energy? Within 15 seconds of turning the lights off, numbers would change on the screen. The results of the study were astounding – energy usage was cut by 56 percent.

Knowing this would have tremendous value in any sector, Shunturov kept spreading the word on the innovation and presented on the National Mall in Washington, D.C. This led

Lucid's EPA-funded study across college campuses reduced energy consumption by up to 60% in certain dormitories by providing real-time data and feedback on energy usage.

to an even larger grant from the EPA worth $75K. Customers like Harvard and Emory contacted Shunturov and requested a similar technology deployment to meet their energy saving needs. Over two hundred educational institutions soon followed. Today, BuildingOS, as it was eventually named, is the leading cloud-based building operations platform which integrates and aggregates portfolio-wide building performance and operations data for simple, collaborative analysis.

"The validation of our research showed there was a business that could be launched and the need is tangible and real," expressed Shunturov. "When we graduated from college, we moved to Oakland, California and worked on the business full time. When it comes to good engineering talent, and the technology ecosystem required for rapid innovation, there is really no better place to be than the Bay area."

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VLADI SHUNTUROV
FOUNDER AND CEO

With a new location and customer buzz growing rapidly, Lucid grew the company organically over the next ten years. BuildingOS was also evolving with key features like a powerful reporting engine that employees across the enterprise could instantly access and share, resulting in quick, measurable productivity gains. The utility bill management features allowed the automation of capturing utility bills directly from the utility, making it easy to analyze bill trends and ensure the accuracy of monthly spend, as well as tracking the ROI of efficiency investments.

When Lucid wanted to branch out into other applications of the technology, the company turned to the EPA Small Business Innovation Research (SBIR) program. A back to back Phase I and Phase II grant was awarded to seed the development of software tools that allow off-the-shelf, multi-colored, internet-connect LEDs to be transformed into "Building Orbs."

These orbs work to reduce electricity use in commercial buildings by providing ambient color-based feedback to building occupants, thus enabling behavior-based peak demand management through the use of visual messaging. Built on the same BuildingOS platform, the resulting software allows building managers to turn LED light bulbs into Building Orbs in a matter of minutes.

"The benefit of our SBIR efforts were focused on information dissemination," adds Shunturov. "How do we motivate a human being to take action? To change behavior? All of this engagement and research and development is at the core of SBIR. It is also hard for a small company to take a risk when a technology is not yet proven. SBIR helped steer and unlock future product directions."

A recent grant from the Department of Energy (DOE) is fostering a collaboration between Lucid and Lawrence Berkeley National Laboratory, centered around Big Data cloud analytics and a measurement & verification application for using data science to track efficiency investment dollars ROI. With hundreds of corporate, government and academic customers, Lucid is sure to stay at the forefront of people-centric building technology.

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